

FOR DEPENDENT CLAIMS CHANGE BEING TO IS OR TAKE OUT WHEREIN

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 1-22, CANCEL claim 23, and ADD new claim 24 in accordance with the following:

1. (CURRENTLY AMENDED) An actuator of a hard disk drive, having a base plate and a voice coil motor, to move a magnetic head to record and reproduce data with respect to a disk to a predetermined position on the disk, comprising:
 - a slider where the magnetic head is mounted; and
 - an arm having:
 - a leading end portion;
 - a center;
 - a rear end portion included on the base plate of the hard disk drive to pivot;
 - a suspension supporting a the slider at the leading end portion of the arm; where
~~the magnetic head is mounted; an arm included on the base plate of the hard disk drive to pivot,~~
 - ~~the arm including the suspension at a leading end portion of the arm~~
 - a pivot hole at the center of the arm; and
 - ~~a coil of the voice coil motor coupled to a rear end portion of the arm; and~~
 - a set of magnets arranged to be separated a predetermined distance from the
coil; and
 - ~~wherein an area between the set of magnets is an area of the coil having an effective~~
~~portion and an area outside of the set of magnets is an area of the coil having a non-effective~~
~~portion, and,~~
 - wherein the coil is being coupled to the rear end portion of the arm, the coil comprising:
 - an outer mold formed to encompass an outer circumference of the coil on a distal
end relative to the pivot hole,
 - an inner mold formed inside the coil,
 - ~~by an outer mold formed to encompass an outer circumference of the coil,~~

~~an inner mold is formed inside the coil, and~~

a connection mold connecting the outer mold and the inner mold is being formed on at least part of a surface of the area of the coil having the non-effective portion and not on the area of the coil having the effective portion, and wherein the connection mold is only formed on the outer circumference of the coil on the distal end relative to the pivot hole.

2. (CURRENTLY AMENDED) The actuator as claimed in claim 1, wherein the connection mold is being formed at an entire surface of the area of the coil having the non-effective portion.

3. (CURRENTLY AMENDED) The actuator as claimed in claim 1, wherein the connection mold is being formed in a middle portion along a lengthwise direction of the area of the coil having the non-effective portion.

4. (CURRENTLY AMENDED) The actuator as claimed in claim 1, wherein the connection mold is being formed at at least two positions along a lengthwise direction of the area of the coil having the non-effective portion.

5. (CURRENTLY AMENDED) An actuator of a hard disk drive, having a base plate and a voice coil motor, to move a magnetic head to record and reproduce data with respect to a disk to a predetermined position on the disk, comprising:

a slider where the magnetic head is mounted;

a suspension supporting a the slider where the magnetic head is mounted; and

an arm having:

~~included on the base plate of the hard disk drive to pivot, the arm including the suspension at a leading end portion;~~

a center;

~~of the arm and a coil of the voice coil motor coupled to a rear end portion of the arm; and~~

a pivot hole at the center of the arm;

a coil;

a set of magnets arranged to be separated a predetermined distance from the coil, and

~~wherein an area between the~~ set of magnets is an area of the coil having an

effective portion and an area outside of the set of magnets is an area of the coil having a non-effective portion,

wherein the coil is coupled to the rear end portion of the arm, the coil comprising:

by an outer mold formed to encompass an outer circumference of the coil on a distal end relative to the pivot hole,

an inner mold is formed inside the coil, and

a connection mold connecting the outer mold and the inner mold is formed on at least part of a surface of the area of the coil having the non-effective portion and not on the area of the coil having the effective portion and, the connection mold is formed on an upper surface and a lower surface of the area of the coil having the non-effective portion, wherein the connection mold is only formed on the outer circumference of the coil on the distal end relative to the pivot hole.

6. (CURRENTLY AMENDED) A hard disk drive that reproduces data stored in a disk or records data on the disk by using a magnetic head, the hard disk drive comprising:

an actuator;

a slider where the magnetic head is mounted;

a base plate;

including an arm included on the base plate of the hard disk drive to pivot, the arm comprising:

a leading end portion;

a center;

a rear end portion included on the base plate;

a pivot hole at the center of the arm; and

included on a base plate of the hard disk drive to pivot and a suspension at a the leading end portion of the arm and supporting a the slider on which the magnetic head is mounted; and

a voice coil motor including:

a coil having at least one upper and lower surface coupled to a the rear end portion of the arm carrying current in two directions; and

a set of a magnet magnets arranged to be separated a predetermined distance from the coil and to face the at least one of the upper and the lower surfaces of the coil, forming a magnetic field, and pivoting the actuator in a predetermined direction by the an interaction between the current flowing through the coil and a the magnetic field formed by the magnet set of

magnets; and

~~a set of magnets arranged to be separated a predetermined distance from the coil,~~
wherein an area between the set of magnets is an area of the coil having an effective portion and an area outside of the set of magnets is an area of the coil having a non-effective portion and,

the coil is coupled to the rear end portion of the arm, the coil comprising:
~~by~~ an outer mold formed to encompass an outer circumference of the coil on a distal end relative to the pivot hole,

an inner mold ~~is being~~ formed inside the coil, and
a connection mold connecting the outer mold and the inner mold ~~is being~~ formed on at least part of a surface of the area of the coil having the non-effective portion and not on the area of the coil having the effective portion,

wherein the connection mold ~~is being only~~ formed on the outer circumference of the coil on the distal end relative to the pivot hole.

7. (CURRENTLY AMENDED) The actuator as claimed in claim 6, wherein the connection mold ~~is being~~ formed at an entire surface of the area of the coil having the non-effective portion.

8. (CURRENTLY AMENDED) The actuator as claimed in claim 6, wherein the connection mold ~~is being~~ formed in a middle portion along a lengthwise direction of the area of the coil having the non-effective portion.

9. (CURRENTLY AMENDED) The actuator as claimed in claim 6, wherein the connection mold ~~is being~~ formed at at least two positions along a lengthwise direction of the area of the coil having the non-effective portion.

10. (CURRENTLY AMENDED) A hard disk drive that reproduces data stored in a disk or records data on the disk by using a magnetic head, the hard disk drive comprising:
an actuator;
a base plate;
a slider where the magnetic head is mounted; and
~~including an arm included on a~~ the base plate of the hard disk drive to pivot, the arm comprising:

a leading end portion;

a center;

a rear end portion attached to the base plate of the hard disk drive; and

a pivot hole at the center of the arm;

a suspension at ~~a~~ the leading end portion of the arm and supporting ~~at~~ the slider ~~on which the magnetic head is mounted; and~~

a voice coil motor, the voice coil motor comprising:

~~including a coil coupled to a rear end portion of the arm; and~~

~~a magnet arranged to be separated a predetermined distance from the coil and to face at least one of upper and lower surfaces of the coil, and pivoting the actuator in a predetermined direction by the interaction between current flowing through the coil and a magnetic field formed by the magnet; and~~

a set of magnets arranged to be separated a predetermined distance from the coil,

wherein an area between the set of magnets is an area of the coil having an effective portion and an area outside of the set of magnets is an area of the coil having a non-effective portion,

the coil is coupled to the rear end portion of the arm, the coil comprising:

~~by~~ an outer mold formed to encompass an outer circumference of the coil on a distal end relative to the pivot hole,

an inner mold ~~is~~ formed inside the coil, and

a connection mold connecting the outer mold and the inner mold ~~is~~ being formed on at least part of a surface of the area of the coil having the non-effective portion and not on the area of the coil having the effective portion, ~~the connection mold is formed on an upper surface and a lower surface of the area of the coil having the non-effective portion, and is only formed on the outer circumference of the coil~~ on the distal end relative to the pivot hole.

11. (CURRENTLY AMENDED) A suspended actuator of a hard disk drive, having a base plate, that moves a magnetic head to record and reproduce data on a disk to a predetermined position on the disk, comprising:

a slider where the magnetic head is mounted;

a first magnet;

a second magnet;

a coil positioned below the first magnet and above the second magnet;

wherein the first and second magnets form a magnetic field pivoting the suspended actuator during operation, an area between the first magnet and second magnet is an area of the coil having an effective portion, and an area outside of the first magnet and second magnet is an area of the coil having a non-effective portion; and

a pivoting arm on the base plate of the hard disk drive, the pivoting arm comprising;
~~and magnets positioned above and below a part of an area of the coil having an effective portion during operation of the suspended actuator,~~

a leading end portion;

a center;

a rear end portion;

a suspension supporting the slider at the leading end portion of the pivoting arm;

and

a pivot hole at the center of the pivoting arm,

wherein the coil carrying current in two directions from the first magnet and second magnet, including the area of the coil having the effective portion and an area of the coil having a non-effective portion outside of the area of the coil having the effective portion of the magnets, carrying current in two directions and being coupled to the rear end portion of the pivoting arm, the coil comprising:

by an outer mold encompassing an outer circumference of the coil on a distal end relative to the pivot hole,

an inner mold inside the coil, and

a connection mold, connecting the outer mold and the inner molds, mold being formed on at a least part of a surface of the area of the coil having the non-effective portion and not at on a surface of the area of the coil having the effective portion, wherein the connection mold is only and formed on the outer circumference of the coil on the distal end relative to the pivot hole.

12. (CURRENTLY AMENDED) The actuator as claimed in claim 11, wherein the connection mold is being formed at an entire surface of the area of the coil having the non-effective portion.

13. (CURRENTLY AMENDED) The actuator as claimed in claim 11, wherein the connection mold is being formed in a middle portion along a lengthwise direction of the area of the coil having the non-effective portion.

14. (CURRENTLY AMENDED) The actuator as claimed in claim 11, wherein the connection mold ~~is being~~ formed at at least two positions along a lengthwise direction of the area of the coil having the non-effective portion.

15. (CURRENTLY AMENDED) A suspended actuator of a hard disk drive, having a base plate, that moves a magnetic head to record and reproduce data on a disk to a predetermined position on the disk, comprising:

~~a coil;~~

a pivoting arm on the base plate of the hard disk drive; ~~and, the pivoting arm comprising:~~

a leading end portion;

a center;

a rear end portion;

a suspension supporting the slider at the leading end portion of the arm; and

a pivot hole at the center of the arm,

a first magnet;

a second magnet; and

a coil positioned below the first magnet and above the second magnet,

wherein the first and second magnets form a magnetic field pivoting the suspended actuator during operation, an area between the first magnet and second magnet is an area of the coil having an effective portion, and an area outside of the first magnet and second magnet is an area of the coil having a non-effective portion;

~~magnets normally above and below a part of an area of the coil having an effective portion during operation of the suspended actuator,~~

~~wherein the coil, including the area of the coil having the effective portion running perpendicular to a pivoting direction and an area of the coil having a non-effective portion running parallel to the pivoting direction, carrying current in two directions from the first magnet and second magnet and being coupled to the rear end portion of the pivoting arm, the coil comprising: by an outer mold encompassing an outer circumference of the coil,~~

~~an outer mold encompassing an outer circumference of the coil on a distal end relative to the pivot hole,~~

~~an inner mold inside the coil, and~~

~~a connection mold, connecting the outer mold and inner mold, being formed on at least part of a surface of the area of the coil having the non-effective portion and not at on~~

a surface of the area of the coil having the effective portion, and wherein the connection mold is only formed on the outer circumference of the coil on the distal end relative to the pivot hole.

16. (CURRENTLY AMENDED) A hard disk drive, having a base plate and a voice coil motor, to reproduce data stored in a disk or record data on a disk by using a magnetic head, the hard disk drive comprising:

~~a coil;~~

~~an a suspended actuator;~~

a slider on which the magnetic head is mounted; and

~~including a suspended pivoting arm on the base plate of the hard disk drive supporting a~~
the slider, the suspended pivoting arm comprising:

a leading end portion;

a center;

a rear end portion;

a pivot hole at the center of the arm;

a coil of the voice coil motor coupled to the rear portion of the arm;

~~on which the magnetic head is mounted and~~

~~magnets normally above and below a part of an area of the coil having an effective portion during operation of the suspended actuator,~~

wherein an area between the magnets is an area having an effective portion, and an area of the coil outside of the magnets is an area having a non-effective portion,

~~wherein the coil carrying current in two directions, the coil comprising:~~

~~including the area of the coil having the~~

~~effective portion running perpendicular to a pivoting direction and an area of the coil having a non-effective portion running parallel to the pivoting direction, carrying current in two directions and coupled to the pivoting arm by an outer mold encompassing an outer circumference of the coil on a distal end relative to the pivot hole,~~

~~an inner mold inside the coil, and~~

~~a connection mold, connecting the outer mold and the inner mold, at a surface of the area of the coil having the non-effective portion and not at a surface of the area of the coil having the effective portion,~~

~~wherein the connection mold is being only formed on the outer circumference of the coil~~
on the distal end relative to the pivot hole.

17. (CURRENTLY AMENDED) The actuator as claimed in claim 16, wherein the connection mold ~~is at~~being formed on an entire surface of the area of the coil having the non-effective portion.

18. (CURRENTLY AMENDED) The actuator as claimed in claim 16, wherein the connection mold ~~is~~being formed in a middle portion along a lengthwise direction of the area of the coil having the non-effective portion.

19. (CURRENTLY AMENDED) The actuator as claimed in claim 16, wherein the connection mold ~~is~~being formed at at least two positions along a lengthwise direction of the area of the coil having the non-effective portion.

20. (CURRENTLY AMENDED) A hard disk drive having a base plate to reproduce data stored in a disk or record data on a disk by using a magnetic head, the hard disk drive comprising:

a slider where the magnetic head is mounted;

a suspended actuator;

a suspended pivoting arm having:

a leading end portion;

a center;

a rear end portion included on the base plate of the hard disk drive to pivot;

a suspension supporting the slider at the leading end portion of the suspended pivoting arm; and

a pivot hole at the center of the suspended pivoting arm;

a coil;

~~an actuator including a suspended pivoting arm on the base plate of the hard disk drive supporting a slider on which the magnetic head is mounted; and~~

a set of magnets normally arranged above and below a part of an area of the coil having an effective portion during operation of the suspended actuator;

~~wherein the coil, including the area of the coil having the effective portion and outside an area of the coil having a non-effective portion outside of the area of the coil having the effective portion and coupled to the pivoting arm by an outer mold encompassing an outer circumference of the coil,~~

wherein the coil being coupled to the rear end portion of the suspended pivoting arm, an

the coil comprising:

an inner mold inside the coil, and

an outer mold formed to encompass an outer circumference of the coil on a distal end relative to the pivot hole, and

a connection mold, connecting the outer mold and the inner molds, mold at a surface of the area of the coil having the non-effective portion and not at on a surface of the area of the coil having the effective portion,

wherein the connection mold is only being formed on the outer circumference of the coil on the distal end relative to the pivot hole.

21. (CURRENTLY AMENDED) A subassembly of a hard disk drive, comprising:

an arm having:

a leading end portion;

a center;

a rear portion; and

a pivot hole at the center of the arm;

a voice coil motor having:

including a coil that has having an upper and a lower surface with an area of the coil having a non-effective portion; and

a set of magnets arranged to be separated a predetermined distance from the coil,

wherein an area between the set of magnets is an area of the coil having an effective portion and an area outside of the magnets is the area of the coil having the non-effective portion; and

the coil of the voice coil motor coupled to the rear portion of the arm, the coil comprising:

an inner mold is being formed inside said the coil;

an outer mold is being formed on an outer circumference of said the coil on a distal end relative to the pivot hole; and

a connection mold connecting said the outer mold and said the inner mold, wherein the connection mold is being formed both on said the upper and said the lower surface of the area of the coil having the non-effective portion and not on the area of the coil having the effective portion, and on the outer circumference of the coil on the distal end relative to the pivot hole.

22. (CURRENTLY AMENDED) An arm of an actuator assembly of a hard disk drive, the arm comprising:

~~an arm, comprising:~~

a voice coil having an effective portion and a non-effective portion;

a set of magnets positioned above and below a part of an area of the ~~voice coil having an effective portion and an area outside of the~~ set of magnets is ~~an area of the voice coil having a non-effective portion;~~

a center;

a pivot hole at the center of the arm;

an outer mold formed to encompass an outer circumference of ~~holding the voice coil on an outside~~ a distal end relative to the pivot hole;

~~an inner mold holding the voice coil on an~~ formed inside the voice coil; and

a connection mold connecting the inner mold and the outer mold across the voice coil and is being formed on at least part of a surface of the area of the voice coil having the non-effective portion and not on the area of the voice coil having the effective portion, ~~wherein the connection mold is only formed and on an~~ the outer circumference of the voice coil on the distal end relative to the pivot hole.

23. (CANCELLED)

24. (NEW) A hard disk drive that reproduces data stored in a disk or records data on the disk by using a magnetic head, the hard disk drive comprising:

an actuator;

a slider where the magnetic head is mounted;

a suspension supporting the slider;

a base plate; and

an arm included on the base plate, the arm comprising:

a leading end portion;

a center;

a rear portion; and

a pivot hole at the center of the arm;

a coil coupled to the rear portion of the arm having an outer circumference; and

a set of magnets positioned above and below the coil,

wherein the coil carrying current in two directions from the set of magnets, the coil

comprising:

an outer mold formed to encompass the outer circumference of the coil on a distal end relative to the pivot hole;

an inner mold formed inside the coil; and

a connection mold connecting the inner mold and the outer mold across the coil being formed on the outer circumference of the voice coil on the distal end relative to the pivot hole.